an initial space station is compliant with the license terms and conditions and that the space station has been placed in its authorized orbit and has begun operating. Operating authority for all space stations subsequently brought into service pursuant to the license will terminate upon its expiration.

(e) *Renewal of licenses.* Applications for renewals of earth station licenses must be submitted on FCC Form 312R no earlier than 90 days, and no later than 30 days, before the expiration date of the license. Applications for space station system replacement authorization for non-geostationary orbit satellites shall be filed no earlier than 90 days, and no later than 30 days, prior to the end of the twelfth year of the existing license term.

[56 FR 24016, May 28, 1991, as amended at 58 FR 68059, Dec. 23, 1993; 59 FR 53327, Oct. 21, 1994. Redesignated and amended at 62 FR 5928, 5929, Feb. 10, 1997; 65 FR 59142, Oct. 4, 2000; 67 FR 12485, Mar. 19, 2002; 67 FR 51113, Aug. 7, 2002; 68 FR 51503, Aug. 27, 2003; 68 FR 63999, Nov. 12, 2003; 72 FR 50027, Aug. 29, 2007; 75 FR 45067, Aug. 2, 2010; 79 FR 8317, Feb. 12, 2014; 85 FR 43733, July 20, 2020]

EFFECTIVE DATE NOTE: At 85 FR 52451, Aug. 25, 2020, §25.121 was amended by adding paragraph (f). This amendment contains information collection and recordkeeping requirements and will not become effective until approval has been given by the Office of Management and Budget. For the convenience of the user, the added text is set forth below:

**§ 25.121 License term and renewals.**

* * * * *

(f) *Geostationary Satellite License Term Extensions.* (1) For geostationary space stations issued an initial license term for a period of 15 years, licensees may apply for a modification to extend the license term in increments of five years or less.

(2) Geostationary space station licensees seeking a license term extension through a license modification application must provide a statement that includes the following:

(i) The requested duration of the license extension;

(ii) The estimated total remaining space station lifetime;

(iii) A description of any single points of failure or other malfunctions, defects, or anomalies during the space station operation that could affect its ability to conduct end-of-life procedures as planned, and an assessment of the associated risk;

(iv) A certification that remaining fuel reserves are adequate to complete de-orbit as planned; and

(v) A certification that telemetry, tracking, and command links are fully functional.

**§ 25.122 Applications for streamlined small space station authorization.**

(a) This section shall only apply to applicants for NGSO systems that are able to certify compliance with the certifications set forth in paragraph (c) of this section. For applicants seeking to be authorized under this section, a comprehensive proposal for Commission evaluation must be submitted for each space station in the proposed system on FCC Form 312, Main Form and Schedule S, as described in §25.114(a) through (c), together with the certifications described in paragraph (c) of this section and the narrative requirements described in paragraph (d) of this section.

(b) Applications for NGSO systems may be filed under this section, provided that the total number of space stations requested in the application is ten or fewer.

(1) To the extent that space stations in the satellite system will be technically identical, the applicant may submit an application for blanket-licensed space stations.

(2) Where the space stations in the satellite system are not technically identical, the applicant must certify that each space station satisfies the criteria in paragraph (c) of this section, and submit technical information for each type of space station.

(c) Applicants filing for authorization under the streamlined procedure described in this section must include with their applications certifications that the following criteria will be met for all space stations to be operated under the license:

(1) The space station(s) will operate only in non-geostationary orbit;

(2) The total in-orbit lifetime for any individual space station will be six years or less;

(3) The space station(s):

(i) Will be deployed at an orbital altitude of 600 km or below; or

(ii) Will maintain a propulsion system and have the ability to make collision avoidance and deorbit maneuvers using propulsion;

(4) Each space station will be identifiable by a unique signal-based telemetry marker distinguishing it from other space stations or space objects;

(5) The space station(s) will release no operational debris;

(6) The space station operator has assessed and limited the probability of accidental explosions, including those resulting from the conversion of energy sources on board the space station(s) into energy that fragments the spacecraft;

(7) The probability of a collision between each space station and any other large object (10 centimeters or larger) during the orbital lifetime of the space station is 0.001 or less as calculated using current National Aeronautics and Space Administration (NASA) software or other higher fidelity model;

(8) The space station(s) will be disposed of post-mission through atmospheric re-entry. The probability of human casualty from portions of the spacecraft surviving re-entry and reaching the surface of the Earth is zero as calculated using current NASA software or higher fidelity models;

(9) Operation of the space station(s) will be compatible with existing operations in the authorized frequency band(s). Operations will not materially constrain future space station entrants from using the authorized frequency band(s);

(10) The space station(s) can be commanded by command originating from the ground to immediately cease transmissions and the licensee will have the capability to eliminate harmful interference when required under the terms of the license or other applicable regulations;

(11) Each space station is 10 cm or larger in its smallest dimension; and

(12) Each space station will have a mass of 180 kg or less, including any propellant.

(d) The following information in narrative form shall be contained in each application:

(1) An overall description of system facilities, operations, and services and an explanation of how uplink frequency bands would be connected to downlink frequency bands;

(2) Public interest considerations in support of grant;

(3) A description of means by which requested spectrum could be shared with both current and future operators, (*e.g.*, how ephemeris data will be shared, antenna design, earth station geographic locations) thereby not materially constraining other operations in the requested frequency band(s);

(4) For space stations with any means of maneuverability, including both active and passive means, a description of the design and operation of maneuverability and deorbit systems, and a description of the anticipated evolution over time of the orbit of the proposed satellite or satellites; and

(5) In any instances where spacecraft capable of having crew aboard will be located at or below the deployment orbital altitude of the space station seeking a license, a description of the design and operational strategies that will be used to avoid in-orbit collision with such crewed spacecraft shall be furnished at time of application. This narrative requirement will not apply to space stations that will operate beyond Earth's orbit.

(6) A list of the FCC file numbers or call signs for any known applications or Commission grants related to the proposed operations (*e.g.*, experimental license grants, other space station or earth station applications or grants).

[85 FR 43734, July 20, 2020]

EFFECTIVE DATE NOTE: At 85 FR 52452, Aug. 25, 2020, § 25.122 was amended by revising paragraphs (c) and (d). This amendment contains information collection and recordkeeping requirements and will not become effective until approval has been given by the Office of Management and Budget. For the convenience of the user, the revised text is set forth below:

**§ 25.122 Applications for streamlined small space station authorization.**

* * * * *

(c) Applicants filing for authorization under the streamlined procedure described in this section must include with their applications certifications that the following criteria will be met for all space stations to be operated under the license:

(1) The space station(s) will operate only in non-geostationary orbit;

(2) The total in-orbit lifetime for any individual space station will be six years or less;

(3) The space station(s):

(i) Will be deployed at an orbital altitude of 600 km or below; or

(ii) Will maintain a propulsion system and have the ability to make collision avoidance and deorbit maneuvers using propulsion;

(4) Each space station will be identifiable by a unique signal-based telemetry marker distinguishing it from other space stations or space objects;

(5) The space station(s) will release no operational debris;

(6) The space station operator has assessed and limited the probability of accidental explosions, including those resulting from the conversion of energy sources on board the space station(s) into energy that fragments the spacecraft;

(7) The probability of a collision between each space station and any other large object (10 centimeters or larger) during the orbital lifetime of the space station is 0.001 or less as calculated using current National Aeronautics and Space Administration (NASA) software or other higher fidelity model;

(8) The space station(s) will be disposed of post-mission through atmospheric re-entry. The probability of human casualty from portions of the spacecraft surviving re-entry and reaching the surface of the Earth is zero as calculated using current NASA software or higher fidelity models;

(9) Operation of the space station(s) will be compatible with existing operations in the authorized frequency band(s). Operations will not materially constrain future space station entrants from using the authorized frequency band(s);

(10) The space station(s) can be commanded by command originating from the ground to immediately cease transmissions and the licensee will have the capability to eliminate harmful interference when required under the terms of the license or other applicable regulations;

(11) Each space station is 10 cm or larger in its smallest dimension;

(12) Each space station will have a mass of 180 kg or less, including any propellant;

(13) The probability that any individual space station will become a source of debris by collision with small debris or meteoroids that would cause loss of control and prevent disposal is 0.01 (1 in 100) or less; and

(14) Upon receipt of a space situational awareness conjunction warning, the licensee or operator will review and take all possible steps to assess the collision risk, and will mitigate the collision risk if necessary. As appropriate, steps to assess and mitigate the collision risk should include, but are not limited to: Contacting the operator of any active spacecraft involved in such a warning; sharing ephemeris data and other appropriate operational information with any such operator; and modifying space station attitude and/or operations.

(d) The following information in narrative form shall be contained in each application:

(1) An overall description of system facilities, operations, and services and an explanation of how uplink frequency bands would be connected to downlink frequency bands;

(2) Public interest considerations in support of grant;

(3) A description of means by which requested spectrum could be shared with both current and future operators, (*e.g.,* how ephemeris data will be shared, antenna design, earth station geographic locations) thereby not materially constraining other operations in the requested frequency band(s);

(4) If at any time during the space station(s)' mission or de-orbit phase the space station(s) will transit through the orbits used by any inhabitable spacecraft, including the International Space Station, a description of the design and operational strategies, if any, that will be used to minimize the risk of collision and avoid posing any operational constraints to the inhabitable spacecraft shall be furnished at the time of application;

(5) A statement identifying characteristics of the space station(s)' orbits that may present a collision risk, including any planned and/or operational space stations in those orbits, and indicating what steps, if any, have been taken to coordinate with the other spacecraft or system, or what other measures the licensee plans to use to avoid collision;

(6) A statement disclosing how the licensee or operator plans to identify the space station(s) following deployment and whether space station tracking will be active or passive; whether the space station(s) will be registered with the 18th Space Control Squadron or successor entity prior to deployment; and the extent to which the space station licensee or operator plans to share information regarding initial deployment, ephemeris, and/or planned maneuvers with the 18th Space Control Squadron or successor entity, other entities that engage in space situational awareness or space traffic management functions, and/or other operators;

(7) A description of the design and operation of maneuverability and deorbit systems, if any, and a description of the anticipated evolution over time of the orbit of the proposed satellite or satellites;

(8) If there are planned proximity operations, a statement disclosing those planned operations, and addressing debris generation that will or may result from the proposed operations, including any planned release of debris, the risk of accidental explosions, the risk of accidental collision, and measures taken to mitigate those risks;

(9) A demonstration that the probability of success of disposal is 0.9 or greater for any individual space station. Space stations deployed to orbits in which atmospheric drag

will, in the event of a space station failure, limit the lifetime of the space station to less than 25 years do not need to provide this additional demonstration; and

(10) A list of the FCC file numbers or call signs for any known applications or Commission grants related to the proposed operations (*e.g.*, experimental license grants, other space station or earth station applications or grants).

### § 25.123 Applications for streamlined small spacecraft authorization.

(a) This section shall only apply to applicants for space stations that will operate beyond Earth's orbit and that are able to certify compliance with the certifications set forth in paragraph (b) of this section. For applicants seeking to be authorized under this section, a comprehensive proposal for Commission evaluation must be submitted for each space station in the proposed system on FCC Form 312, Main Form and Schedule S, as described in § 25.114(a) through (c), together with the certifications described in paragraph (b) of this section and the requirements described in paragraph (c) of this section.

(b) Applicants filing for authorization under the streamlined procedure described in this section must include with their applications certifications that the following criteria will be met for all space stations to be operated under the license:

(1) The space station(s) will operate and be disposed of beyond Earth's orbit;

(2) The total lifetime from deployment to spacecraft end-of-life for any individual space station will be six years or less;

(3) Each space station will be identifiable by a unique signal-based telemetry marker distinguishing it from other space stations or space objects;

(4) The space station(s) will release no operational debris;

(5) No debris will be generated in an accidental explosion resulting from the conversion of energy sources on board the space station(s) into energy that fragments the spacecraft;

(6) The probability of a collision between each space station and any other large object (10 centimeters or larger) during the lifetime of the space station is 0.001 or less as calculated using current NASA software or higher fidelity models;

(7) Operation of the space station(s) will be compatible with existing operations in the authorized frequency band(s). Operations will not materially constrain future space station entrants from using the authorized frequency band(s);

(8) The space station(s) can be commanded by command originating from the ground to immediately cease transmissions and the licensee will have the capability to eliminate harmful interference when required under the terms of the license or other applicable regulations;

(9) Each space station is 10 cm or larger in its smallest dimension; and

(10) Each space station will have a mass of 500 kg or less, including any propellant.

(c) Applicants must also provide the information specified in § 25.122(d) in narrative form.

[85 FR 43734, July 20, 2020]

EFFECTIVE DATE NOTE: At 85 FR 52452, Aug. 25, 2020, § 25.123 was amended by adding paragraph (b)(11). This amendment contains information collection and recordkeeping requirements and will not become effective until approval has been given by the Office of Management and Budget. For the convenience of the user, the added text is set forth below:

**§ 25.123 Applications for streamlined small spacecraft authorization.**

* * * * *

(b) * * *

(11) Upon receipt of a space situational awareness conjunction warning, the operator will review and take all possible steps to assess the collision risk, and will mitigate the collision risk if necessary. As appropriate, steps to assess and mitigate the collision risk should include, but are not limited to: Contacting the operator of any active spacecraft involved in such a warning; sharing ephemeris data and other appropriate operational information with any such operator; and modifying space station attitude and/or operations.

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### § 25.129 Equipment authorization for portable earth-station transceivers.

(a) Except as expressly permitted by § 2.803 or § 2.1204 of this chapter, prior